AMENDMENT TO THE CLAIMS:

The following claims replace all prior versions and listings of claims in the application:

1-34. (Cancelled)

35. (Currently Amended) A method of managing digital signal processing in a single processor when inadequate processing resources are available in the processor to execute functions of a software process in a time period, comprising:

~~providing a plurality of channels in a processor;~~

~~executing~~ providing a plurality of functions of an adaptive algorithm in the software process ~~algorithms in one or more said channels~~ that use the processing resources of the processor, wherein an execution of each function is manageable;

~~fixing a high usage threshold of the processing resources for use by the algorithms;~~

~~exceeding, or anticipating the exceedance of, the high usage threshold by said executing of the algorithms; and~~

allocating the processing resources among ~~the algorithms~~ each function based on an estimated use of the processing resources by each function ~~algorithm~~ and an achieved performance of each ~~algorithm~~ function so as not to exceed ~~the high usage threshold by a cumulative use of~~ the processing resources available in the processor in a time period ~~by the executing algorithms~~; and

controlling the execution of each function according to the allocation of the processing resources.

36. (Currently Amended) The method of claim 35, wherein said allocating further comprises:

allocating the processing resources among ~~the algorithms~~ each function based on an environmental input.

37. (Currently Amended) The method of claim 35, wherein said allocating comprises prioritizing the allocation of the processing resources among ~~the algorithms that exhibit greater requirements for processing resources~~ each function based on the estimated use of the processing resources by each ~~algorithm~~ function and the achieved performance of each ~~algorithm~~ function according to a hierarchical priority scheme.

38. (Currently Amended) The method of claim 35 , wherein said allocating further comprises ~~de-prioritizing~~ prioritizing the allocation of the processing resources among ~~the algorithms that exhibit lesser requirements for processing resources~~ each function based on the estimated use of the processing resources by each ~~algorithm~~ function and the achieved performance of each ~~algorithm~~ function according to a round-robin priority scheme .

39. (Currently Amended) The method of claim [[38]] 35, wherein said allocating comprises removing a portion of the allocated processing resources from each ~~algorithm~~ manageable function that can execute using fewer processing resources than were initially allocating during the time period.

40. (Currently Amended) The method of claim 35, wherein the controlling further ~~comprising:~~ comprises performing re-allocation of fewer of the processing resources to each of the functions that are manageable for performance-degrading execution ~~when a cumulative amount of the processing resources are required that would exceed the high usage threshold~~.

41. (Currently Amended) The method of claim [[35]] 40, wherein said allocating further comprises setting a low usage threshold of the processing resources; and

re-allocating ~~said~~ more of the processing resources to ~~the algorithms~~ each performance-degraded function when a cumulative usage of said processing resources by the ~~algorithms~~ functions fall below said low usage threshold based on the estimated consumption of said processing resources by each ~~algorithm~~ function and the achieved performance of each ~~algorithm~~ function.

42. (Currently Amended) The method of claim 35, wherein said controlling comprises one of enabling each function for executing, ~~the plurality of algorithms comprises~~

~~executing one or more~~ function of each algorithm that are capable of being managed disabling to prevent execution, and degrading execution by allocating fewer processing resources if the function is capable of performance-degraded execution.

43. (Cancelled)

44. (Currently Amended) The method of claim 35, further comprising:

providing an ~~original~~ estimate of maximum processing resources required for execution of each ~~algorithm~~ function;

monitoring actual use of the processing resources by the execution of each ~~respective algorithm~~ function; and

providing the estimated consumption for each ~~respective algorithm~~ function based on the original estimate and the actual use of the processing resources; and

storing the estimate of maximum required processing resource for execution of each function and a minimum required processing resource for execution of each function for the controlling of the execution of each function.

45. (Currently Amended) The method of claim 35, wherein the controlling ~~plurality of~~ comprises ~~executing a one or more~~ controlling the execution of the plurality of functions

of ~~each~~ the algorithm ~~concurrently~~ without executing any function on an additional processor.

46 (Currently Amended). A system of processing resource management in a single processor when inadequate processing resources are available in the processor to execute functions of a software process in a time period, comprising:

a plurality of communication channels that convey signals;

a processor, operably connected to the communication channels, that receives the signals from the communication channels and is programmed to:

~~execute~~ provide a plurality of functions of an adaptive algorithm ~~algorithms, using~~ that use processing resources of the processor ~~, in one or more digital channels~~ , wherein the execution of each function is manageable;

~~maintain a high usage threshold of the processing resources used by the algorithms; and~~

~~when the use of the processing resources by the execution of the algorithms is anticipated to exceed or exceeds the high usage threshold,~~

allocate the processing resources among ~~the algorithms~~ each function based on an estimated use of the processing resources by each ~~algorithm~~ function and an achieved performance of each ~~algorithm~~ function so as not to exceed the processing resources available in the processor in a time period; and

controlling an execution of each function according to the allocation of the

processing resources.

47 (Currently Amended). The system of claim 46, wherein the processor is further programmed to:

allocate the processing resources among ~~the algorithms~~ each function based on an environmental input.

48. (Currently Amended) The system of claim [[46]] 47, wherein the processor is further programmed to:

prioritize allocation of the processing resources among ~~the algorithms that exhibit greater requirements for processing resources~~ each function based on the estimated use of processing resources by each ~~algorithm~~ function, the environmental input, and the achieved performance of each ~~algorithm~~ function according to a hierarchical priority scheme.

49. (Currently Amended) The system of claim [[46]] 48, wherein the processor is further programmed to:

~~de-prioritize~~ prioritize the allocation of the processing resources among ~~the algorithms that exhibit greater requirements for processing resources~~ each function based on the estimated use of processing resources by each ~~algorithm~~ function, the environmental input, and the achieved performance of each ~~algorithm~~ function

according to a round-robin priority scheme.

50 (Currently Amended). The system of claim 46, wherein the control by the processor is further programmed to:

perform ~~performance-degrading~~ re-allocation of fewer of the processing resources to each of the functions that are manageable for performance-degrading execution ~~when a cumulative amount of required processing resources is anticipated to exceed or exceeds the high usage threshold~~.

51 (Currently Amended). The system of claim [[46]] 50, wherein the processor is further programmed to:

~~maintain~~ set a low usage threshold of the processing resources; and

re-allocate the processing resources to ~~the algorithms~~ each performance-degraded function when a cumulative usage of said processing resources by the ~~algorithms~~ functions fall below said low usage threshold based on the estimated consumption of said processing resources by each ~~algorithm~~ function, the environmental input, and the achieved performance of each ~~algorithm~~ function.

52 (Currently Amended). The system of claim 46, wherein the processor is further programmed to:

~~allocate the processing resources among one or more functions of each algorithm that are~~ control each function by one of enabling each function for executing, disabling to prevent execution, and degrading execution by allocating fewer processing resources if the function capable of being managed for performance-degraded execution.

53 (Currently Amended). A method of resource management in a single processor having multiple communication channels when inadequate processing resources are available in the processor to execute functions of a software process in a time period, comprising:

estimating a processing resource consumption of a plurality of functions of one or more adaptive algorithms that are ~~in a queue~~ waiting to be executed, wherein an execution of each function is manageable;

~~executing the functions in one or more of the channels;~~

~~if a cumulative execution of the functions is anticipated to exceed a high processing resource usage threshold for the processor, then~~ allocating the processing resources to each function according to the estimated use of the processing resources for each function, an achieved performance of each function, and an environmental condition so as to not exceed the available processing ~~resource usage threshold~~ resources of the processor in a time period.

54 (Currently Amended). The method of claim 53, further comprising:

performing ~~performance-degrading~~ re-allocation of fewer of the processing resources to each of the functions that are manageable for performance-degrading execution ~~when a cumulative amount of the processing resources are required that would exceed the processing resource usage threshold~~.

55. (New) The method of claim 53, further comprising:

controlling execution of each function by one of enabling for execution, disabling to prevent execution, and degrading execution by allocating fewer processing resources if the function is capable of performance-degraded execution.